

CALIFORNIA'S AIR TOXICS PROGRAM: IMPROVEMENTS TO ASSESS HEALTH RISK

Update to the
Air Resources Board
July 24, 2014



Air Resources Board

California Environmental Protection Agency

What changed and what are the impacts?

- Updated risk assessment guidance
 - New studies on childhood sensitivity
 - New data on exposure
- Impacts of the updates
 - Cancer risk estimates will increase 1.5-3x
 - Greater responsibilities for facilities and agencies to notify public and reduce risk
 - Districts/ARB will re-evaluate toxics programs

Outline

- Background
- Challenges
- Overview of new science (OEHHA)
- Air district actions (CAPCOA)
- ARB actions



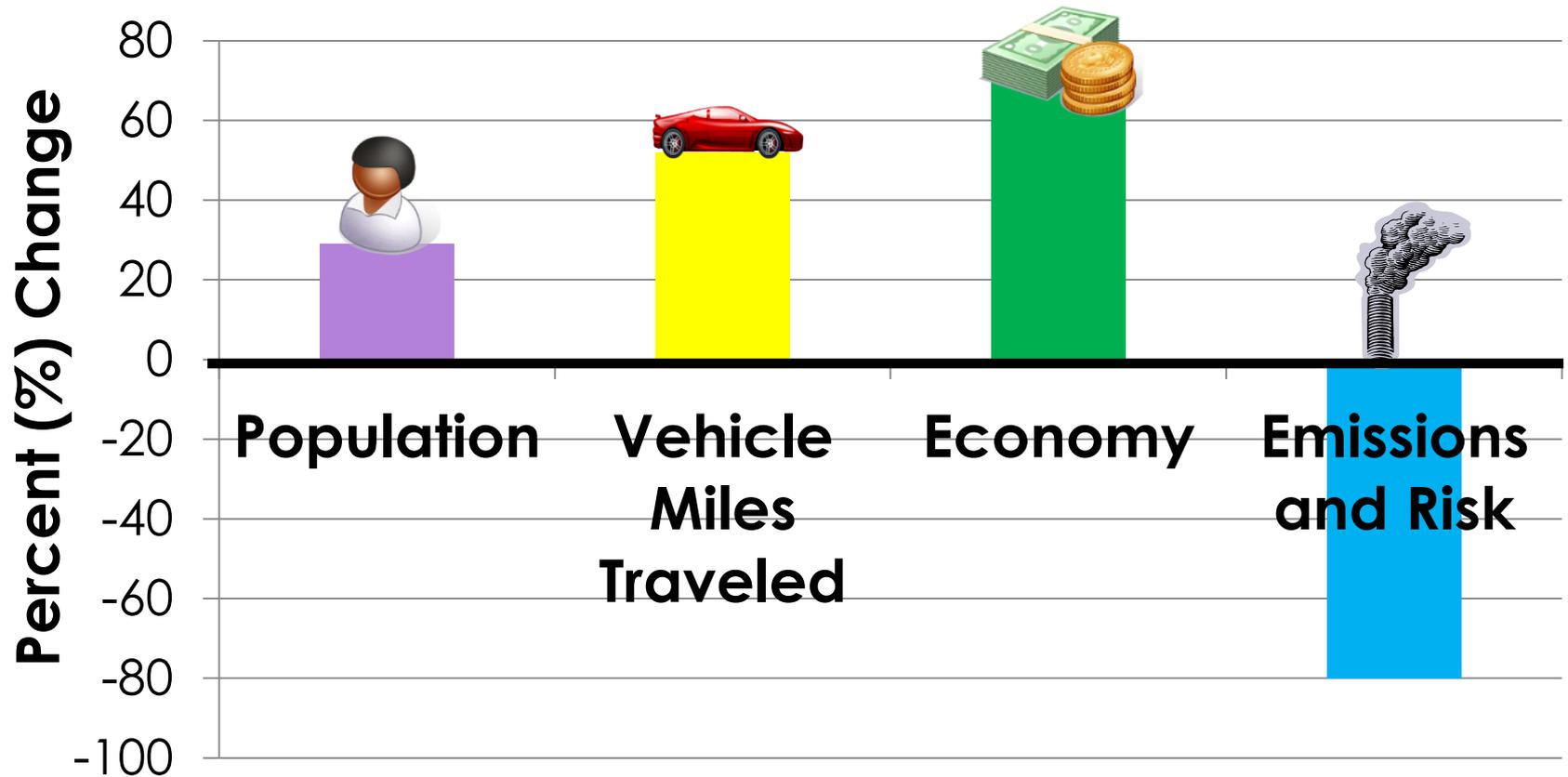
California's air toxics programs: risk characterization

- Risk assessment (OEHHA, Districts, ARB)
- Notification (Districts, Industry)
- Emissions (ARB, Districts, Industry)
- Identification (ARB, OEHHA)
- Air monitoring (ARB, Districts)
- Communication (Districts, ARB, Industry, NGOs)

California's air toxics programs: risk reduction

- Facility upgrades & permitting (Districts)
- Risk reduction audits and plans (Districts, Industry)
- Air toxics control measures (ARB, Districts)
- Enforcement (ARB, Districts)
- Incentives (ARB, Districts)

Progress: 80% reduction in ambient cancer risk statewide since 1990



OEHHA Guidance Manual: how is it used?

- Estimate potential health risk
 - “Hot Spots” program (e.g., risk assessment, public notification, and risk reduction)
 - Goods movement and special studies
 - Estimate statewide/community risks
 - District permitting
 - Regulatory development

Policy consideration

Example: gasoline service station with best controls installed

District notification level	District risk reduction level	State of the art controls required	Previous cancer risk	New cancer risk
≥10 chances per million	10-100 chances per million	<ul style="list-style-type: none">• Reform gas• Phase I/II & onboard vapor recovery	8 chances per million	22 chances per million

OEHHA Risk Assessment Guidance Manual

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Office of Environmental Health Hazard Assessment



Overview of the OEHHA changes

Cancer Risk =

$$\text{Cancer Potency Factor} \times \text{Age-Sensitivity Factor} \times \text{Inhalation Dose}^* \times \text{Time at Home} \times \text{Exposure Duration}$$

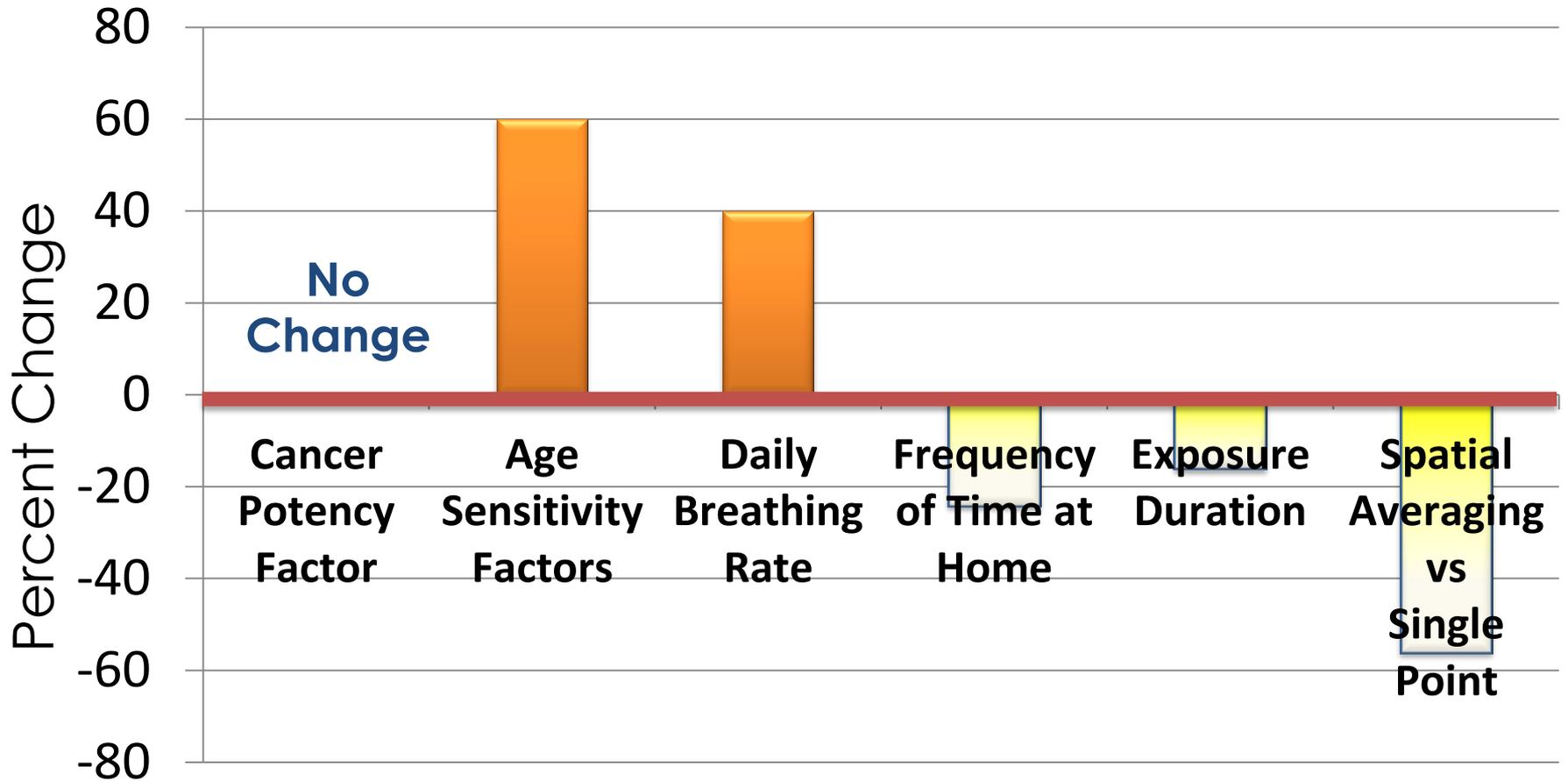
*(concentration x daily breathing rate)

All components in red are affected by updates in the 2014 OEHHA Guidelines

Updated methodology for estimating potential cancer risk

- Refines exposure data (e.g., breathing rates) for individuals of all ages (**Inhalation Dose**)
- Provides adjustments for increased childhood sensitivity to air toxics (**Age Sensitivity Factors**)
- Includes refinements to exposure assessment (**Time at Home, Exposure Duration, Spatial Averaging**)
- U.S. EPA uses similar information in its risk guidelines and programs

Magnitude of risk and dose variables



Air District Actions

Barbara Lee

Air Pollution Control Officer

Northern Sonoma Air Pollution Control
District

representing the

California Air Pollution Control Officers' Association



Air districts: review of rules and programs

- State and federal laws specify local authorities and obligations
 - Consideration of toxic emissions/impacts in permits
 - Establish requirements for new, modified & existing facilities; local discretion setting risk thresholds
- Districts are individually reviewing toxics rules, programs, and policies including notification, risk reduction, and permitting requirements
- CAPCOA is evaluating “Hot Spots” Prioritization Guidelines

Air districts: review of “Hot Spots” impacts

- Impacts from thousands of facilities will be revised, and potentially tens of thousands will be prioritized for review
- Smaller “industrywide” sources may rely on ARB/CAPCOA developed assessments
- Public notification could impact 700 to 1,200 facilities
- Risk reduction audits & plans may be required at over 350 facilities

Air districts: coordination and outreach

- Coordinate with ARB on evaluation and review for source categories
 - Identify industrywide assessments
 - Prioritize control measure reevaluations
- Prepare summaries and outreach materials
- Engage local stakeholders

Air Resources Board Actions



Air Resources Board
California Environmental Protection Agency

Coordination and outreach

Previously...

- CalEPA convened OEHHA, ARB, air districts prior to release of draft Guidance
 - Common messaging document
 - Briefings of industry and environmental representatives
 - Outreach at conferences and workshops

Coordination and outreach

Looking ahead...

- ARB committed to work with CAPCOA, industry, and environmental advocates
 - Risk communication
 - Risk management guidance
- Public meetings and Board item
 - List serve on website
<http://www.arb.ca.gov/toxics/toxics.htm>

Evaluation/update of existing programs in 2014-2015

- Update Hotspots Analysis and Reporting Program (HARP) software for risk assessments
- Amend emissions reporting regulation
- Identify sources for “industrywide” risk analyses
- Begin updating risk management policy
 - Technical inputs on risk assessments
 - Guidance on district permitting/thresholds
- Prioritize ARB measures for re-evaluation
- Update Land Use Handbook

ARB's evolving emphasis on air toxics



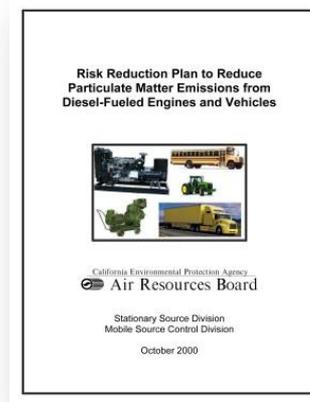
1980

Industrial



1990

Commercial,
Fuels/Fueling



2000

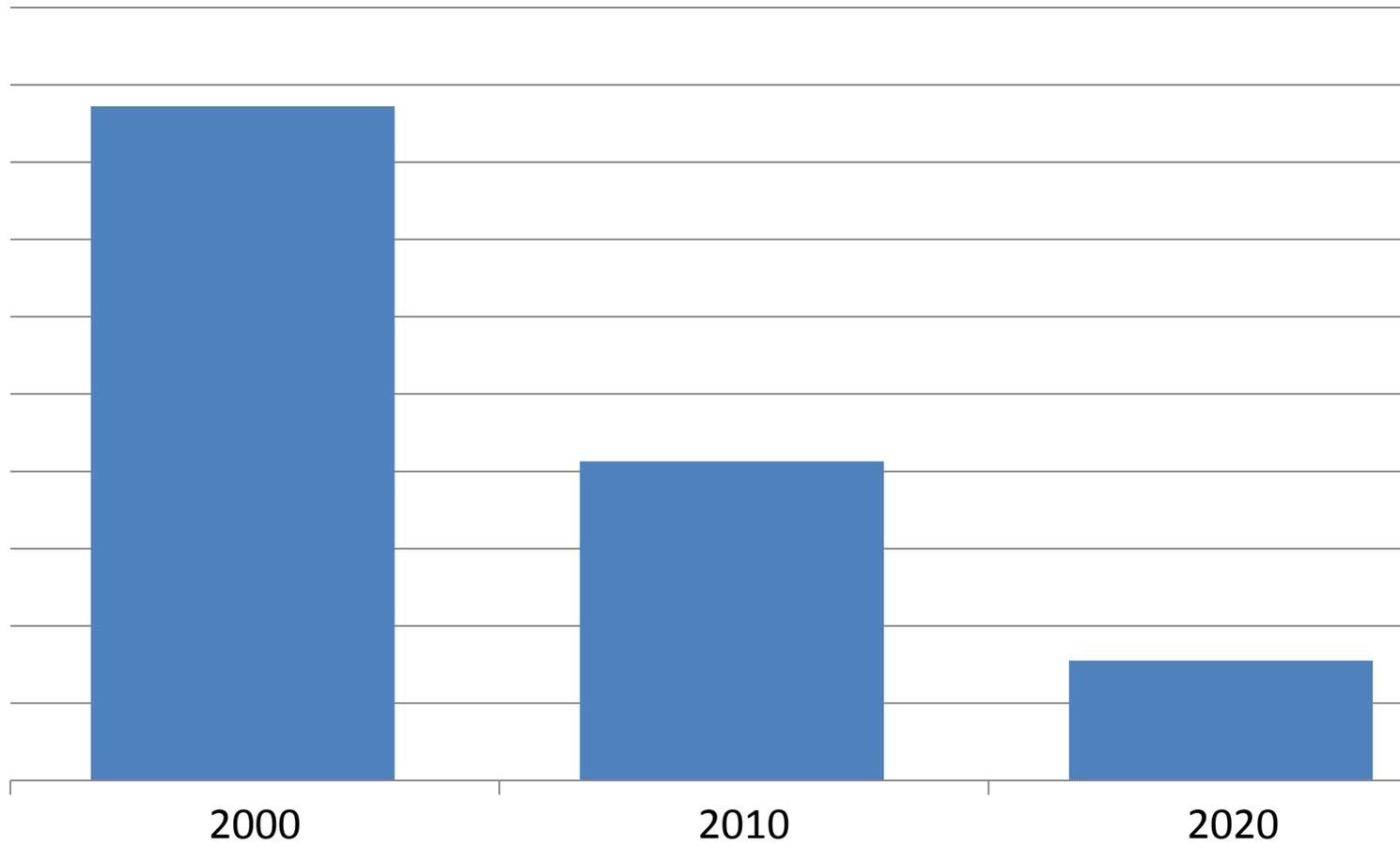
Diesel
Risk
Reduction



2010

Passenger
& Freight
Transportation

>80% reduction in statewide ambient cancer risk from diesel PM



Guiding principles for moving forward

- Protect public health
- Focus on highest risk source categories
- Support continued facility operations to provide critical goods and services
- Require best technology, in consideration of cost and risk
- Support public transparency/access
- Partner with air districts
- Coordinate with industry/environmentalists

Next steps

Timeframe	Milestone
Now – Late 2014	<ul style="list-style-type: none">• Hold meeting(s) on risk guidance• Identify priorities for industrywide approach• Update Board on risk management• Present draft Sustainable Freight Strategy
Early 2015	<ul style="list-style-type: none">• OEHHA adopts Guidance Manual and ARB releases HARP software• Prioritize existing measures for evaluation
Late 2015+	<ul style="list-style-type: none">• Begin re-evaluating measures and/or developing new measures